

## ABSTRACT

A digital valve positioning system is disclosed. The system comprises a valve, a valve controller having a controller microprocessor and a controller memory and a valve actuator having an output coupled to the valve to control the position of the valve over a range of motion in response to an output from the valve controller. The system further comprises a first position sensor for determining the position of the valve actuator and an intelligent limit switch for generating a limit switch state signal indicative of a state of the valve being above or below a threshold set point. The limit switch comprises a second position sensor generating an output signal indicative of the position of the valve, a limit switch memory, a limit switch microprocessor communicatively coupled to the limit switch memory, an isolated communication link between the controller microprocessor and the limit switch microprocessor for transferring the set point data from the controller to the limit switch. The limit switch microprocessor includes a first limit switch microprocessor output, the limit switch microprocessor being responsive to the second position sensor output signal and the set point data stored in the limit switch memory to generate the state signal at the first limit switch microprocessor output.